

In the Claims:

Claims 1-5 (Cancelled)

6. (Currently amended) A material having a catalytic surface that has immobilized, or available at the surface thereof, a catalytic agent having nitrite reductase and/or nitrite reductase-like activity, or nitrosothiol reductase activity, which converts nitrite/nitrate or nitrosothiols to nitric oxide when the catalytic surface is in contact with blood. ~~The material of claim 1~~ wherein the catalytic agent is a biomimetic catalytic agent.

7. (Currently amended) The material of claim 6 wherein the biomimetic catalytic agent is a metal ion ligand complex wherein the metal ion is capable of reducing one or more of nitrite, nitrate, and nitrosothiols, ~~and other nitrogen-containing blood species~~ to nitric oxide.

8. (Original) The material of claim 7 wherein the biomimetic catalytic agent is a Cu(II) metal ion ligand complex.

9. (Original) The material of claim 8 wherein the Cu(II) metal ion ligand is selected from the group consisting of dibenzo[e,k]-2,3,8,9-tetraphenyl-1,4,7,10-tetraaza-cyclododeca-1,3,7,9-tetraene; dibenzo[e,k]-2,3,8,9-tetramethyl-1,4,7,10-tetraaza-cyclododeca-1,3,7,9-tetraene; and dibenzo[e,k]-2,3,8,9-tetraethyl-1,4,7,10-tetraaza-cyclododeca-1,3,7,9-tetraene.

10. (Currently amended) The material of claim ~~4~~ 6 wherein the material is selected from the group consisting of polymers, metals or graphite carbon ~~(graphite)~~.

11. (Original) The material of claim 10 wherein the material is a polymer.

12. (Original) The material of claim 11 wherein the polymer is selected from the group of poly(vinyl chloride), polyurethane, and silicone rubber.

13. (Currently amended) The material of claim 11 wherein the polymer further includes lipophilic salts of nitrite/nitrate or nitrosothiols within the polymer ~~matrix~~ to create a reservoir of nitrite/nitrate or nitrosothiol that can continuously leak to the catalytic surface.

14. (Currently amended) The material of claim 13 wherein the lipophilic salt of ~~nitrite~~ nitrite/nitrate is tridodecylmethyammonium nitrite ($\text{TDMA}^+ \text{NO}_2^-/\text{NO}_3^-$).

15. (Original) The material of claim 10 wherein the material is a metal.

16. (Original) The material of claim 15 wherein the metal is selected from the group consisting of stainless steel, nickel, titanium, aluminum, copper, gold, silver, platinum and alloys or combinations thereof.

17. (Original) The material of claim 15 wherein the catalytic agent is covalently attached to the surface of the metal.

18. (Currently amended) The material of claim 15 wherein the surface of the metal is coated with a polymeric film having the catalytic agent incorporated into the ~~matrix~~ film or attached to the surface of the polymeric film.

19. (Currently amended) The material of claim 18 wherein the polymeric film further includes lipophilic salts of nitrite/nitrate or nitrosothiols within the polymer ~~matrix~~ film to create a reservoir of nitrite/nitrate or nitrosothiol that can continuously leak to the catalytic surface.

20. (Withdrawn) A material comprising:
 a hydrophobic polymer substrate; and
 a catalytic agent having nitrite reductase and/or nitrite reductase-like activity, or a nitrosothiol reductase activity attached to a surface of the hydrophobic polymer substrate to form a catalytic surface.

21. (Withdrawn) The material of claim 20 further including, within the polymer substrate, lipophilic salts of nitrite/nitrate or nitrosothiols within the polymer matrix to create a reservoir of nitrite/nitrate or nitrosothiol that can continuously leak to the catalytic surface.

22. (Withdrawn) The material comprising:
a metal substrate; and
a biomimetic catalytic agent covalently attached to the surface.

23. (Withdrawn) The material of claim 23 wherein the biomimetic catalytic agent is a metal ion ligand complex wherein the ion is capable of reducing one or more of nitrite, nitrate, nitrosothiols, and other blood species to nitric oxide.

24. (Withdrawn) The material of claim 24 wherein the biomimetic catalytic agent is a Cu(II) metal ion ligand.

25. (Withdrawn) The material of claim 23 further comprising a polymeric film lipophilic salts of nitrite/nitrate or nitrosothiols within the polymer matrix to create a reservoir of nitrite/nitrate or nitrosothiol that can continuously leak to the catalytic surface.

26. (Withdrawn) A method of generating NO in vivo at the interface of a material surface and blood in response to contact of the surface with blood comprising:
providing catalytic agents at the surface of a material, the catalytic agents having nitrite reductase and/or nitrite reductase-like activity, or a nitrosothiol reductase activity;
and
contacting the surface of the material to blood so as to convert nitrite/nitrate or nitrosothiols in the blood to nitric oxide.

27. (Withdrawn) The method of claim 27 further comprising the step of:

providing a polymeric film on the material that contains a source of lipophilic salts of nitrite/nitrate or nitrosothiols within the polymer matrix to create a reservoir of nitrite/nitrate or nitrosothiol that can continuously leak to the catalytic surface.

28. (Withdrawn) The method of claim 27 wherein the step of providing a catalytic agent comprises covalently binding or otherwise attaching or making available to the surface, Cu(II) ligand complexes for reducing nitrite/nitrate/nitrosothiols in the blood to NO.

29. (Withdrawn) The method of claim 27 wherein the step of providing a catalytic agent comprises covalently binding or otherwise attaching or making available to the surface, an enzyme having nitrite reductase and/or nitrite reductase-like activity, or a nitrosothiol reductase activity, for reducing nitrite/nitrate/nitrosothiols in the blood to NO.

30. (Currently amended) A medical device comprising:
a material having immobilized, or available at a surface thereof, a biomimetic catalytic agent having nitrite reductase and/or nitrite reductase-like activity, or a nitrosothiol reductase activity, which converts nitrite/nitrate or nitrosothiols to nitric oxide when in contact with blood.

31. (Currently amended) The medical device of claim ~~32~~ 30 wherein ~~the~~ the medical device is selected from the group consisting of arterial stents, guide wires, catheters, bone anchors and screws, protective platings, hip and joint implants, spine appliances, electrical leads, biosensors and probes.

32. (New) The medical device as defined in claim 30 wherein the biomimetic catalytic agent is a metal ion ligand complex wherein the metal ion is capable of reducing one or more of nitrite, nitrate, and nitrosothiols to nitric oxide.

33. (New) The medical device as defined in claim 30 wherein the biomimetic catalytic agent is a Cu(II) metal ion ligand complex.

34. (New) The medical device as defined in claim 33 wherein the Cu(II) metal ion ligand is selected from the group consisting of dibenzo[e,k]-2,3,8,9-tetraphenyl-1,4,7,10-tetraaza-cyclododeca-1,3,7,9-tetraene; dibenzo[e,k]-2,3,8,9-tetramethyl-1,4,7,10-tetraaza-cyclododeca-1,3,7,9-tetraene; and dibenzo[e,k]-2,3,8,9-tetraethyl-1,4,7,10-tetraaza-cyclododeca-1,3,7,9-tetraene.